

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A heat sink device for dissipating heat from an electronic component having a CTE, the heat sink device comprising:

a an heat-dissipating substrate having one or more apertures and a CTE; and
one or more heat-dissipating studs attached within said one or more apertures within said heat-dissipating substrate such that so as to permit the electronic component may to be attached to the heat-dissipating stud, and the one or more heat-dissipating studs comprising a material with a CTE between the CTE of the electronic component to be cooled and the CTE of the heat-dissipating substrate;
and

a thin compliant elastomeric layer for isolating the heat-dissipating substrate and the one or more heat-dissipating studs from one another.

Claim 2 (currently amended) The ~~application-specific~~ heat sink device in accordance with claim 1, wherein said one or more apertures in said heat-dissipating substrate extend from a first side to a second side of said heat-dissipating substrate.

Claim 3 (currently amended) The ~~application-specific~~ heat sink device in accordance with claim 1, wherein said one or more apertures in said heat-dissipating substrate are cylindrical, conical or stepped.

Claim 4 (currently amended) The ~~application-specific~~ heat sink device in accordance with claim 1, wherein said one or more apertures in said heat-dissipating substrate are pyramidal.

Claim 5 (canceled)

Claim 6 (currently amended) The ~~application-specific~~ heat sink device in accordance with claim 1, wherein the heat-dissipating stud comprises a material with a CTE relatively close to the CTE of the electronic component to be cooled.

Claim 7 (currently amended) The ~~application-specific~~ heat sink device in accordance with claim 1, wherein the ~~heat-dissipating~~ heat-dissipating stud comprises a material with a CTE relatively intermediate between the CTE of the electronic component to be cooled and the heat-dissipating substrate.

Claim 8 (currently amended) The ~~application-specific~~ heat sink device in accordance with claim 1, wherein the heat-dissipating stud comprises a metal, a metal alloy or combinations thereof.

Claim 9 (currently amended) A method for manufacturing ~~an~~ a heat sink device for dissipating heat from an electronic component having a CTE, comprising:

forming a heat-dissipating substrate with one or more apertures extending from a first surface to a second surface of the heat-dissipating substrate, and the heat-dissipating substrate comprising a material with a CTE;

forming one or more heat-dissipating studs comprising a material with a CTE between the CTE of the electronic component to be cooled and the CTE of the material of the heat-dissipating substrate, wherein the one or more heat-dissipating studs are shaped and sized to mate within the aperture in the heat-dissipating substrate, extending from one side to the other of the aperture and mate with an electronic device to be cooled on one side of the aperture; and

attaching the heat-dissipating stud within the aperture of the substrate.

Claim 10 (currently amended) The method in accordance with claim 9, wherein the CTE of the heat-dissipating stud ~~comprises a material~~ is selected to have a relatively close CTE with the electronic device component to be cooled.

Claim 11 (currently amended) The method in accordance with claim 9, wherein the CTE of the heat-dissipating stud ~~comprises a material~~ is selected to be relatively

~~have an a~~ intermediate CTE between the heat-dissipating substrate and a the electronic device to be cooled.

Claim 12 (original) The method in accordance with claim 9, further comprising the step of forming a cavity in a top surface of the heat-dissipating substrate; wherein the heat-dissipating stud is attached within the cavity formed on the heat-dissipating substrate.

Claim 13 (canceled)

Claim 14 (new) The heat sink device in accordance with claim 1, wherein the first material of the heat-dissipating substrate and the second material of the one or more heat-dissipating studs are electrically isolated from one another by the thin compliant elastomeric layer.

Claim 15 (new) The heat sink device in accordance with claim 14, wherein the thin compliant elastomeric layer permits selective plating of one of the first material and the second material.

Claim 16 (new) The heat sink device in accordance with claim 1, wherein the thin compliant elastomeric layer absorbs movement of the first material and the second material relative to one another.

Claim 17 (new) The heat sink device in accordance with claim 1, wherein the thin compliant elastomeric layer absorbs CTE mismatch between the first material and the second material relative to one another.

Claim 18 (new) The heat sink device in accordance with claim 1, wherein the one or more apertures of the heat-dissipating substrate and the one or more heat-dissipating studs attached within said one or more apertures form one of a conical cross-section and pyramidal cross-section.

Claim 19 (new) A heat sink device for dissipating heat from an electronic component, the heat sink device comprising:

a heat-dissipating substrate having one or more apertures, and the heat-dissipating substrate comprising a material with a CTE relatively close to the CTEs of adjacent elements so as to allow attachment of the heat-dissipating substrate and adjacent elements to one another; and

one or more heat-dissipating studs attached within said one or more apertures within said heat-dissipating substrate so as to provide thermal transport in a direction perpendicular to the heat-dissipating substrate and reduce thermal stresses in a direction parallel to the heat-dissipating substrate and adjacent elements attached to one another.